



## SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:  
EP 21 87 91 67

### Classification of the application (IPC):

H02J 7/02, B60L 3/00, B60L 53/22, H02M 1/00, H02M 3/00, H02M 3/158,  
H02M 3/335, H02M 7/219, H02M 1/42, H02M 1/14

### Technical fields searched (IPC):

H02J

DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
X	US 2019061553 A1 (YANG JIN MYEONG [KR] ET AL) 28 February 2019 (2019-02-28) * abstract; figures * * paragraphs [0002] - [0014], [0040] - [0071] *	1, 9, 10
Y	<b>WANG HAOYU</b> : "A phase shift full bridge based reconfigurable PEV onboard charger with extended ZVS range and zero duty cycle loss" 2016 <i>IEEE APPLIED POWER ELECTRONICS CONFERENCE AND EXPOSITION (APEC), IEEE</i> , 20 March 2016 (2016-03-20), DOI: 10.1109/APEC.2016.7467915, ISBN: 978-1-4673-8393-6, pages 480-486, XP032898827 * the whole document *	1, 2, 9, 10
Y	CN 109861357 A (DELTA ELECTRONICS INC) 07 June 2019 (2019-06-07) * abstract; figures * * paragraphs [0002] - [0005], [0086] - [0122] *	1, 2, 9, 10

The supplementary search report has been based on the last set of claims valid and available at the start of the search.

Place of search Munich	Date of completion of the search 13 March 2024	Examiner Hartmann, Martin
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### CATEGORY OF CITED DOCUMENTS

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|---|--|
| X: particularly relevant if taken alone   | P: intermediate document   |
| Y: particularly relevant if combined with another document of the same category | T: theory or principle underlying the invention                        |
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| O: non-written disclosure   | D: document cited in the application                                   |
| & : member of the same patent family, corresponding document                    | L: document cited for other reasons                                    |

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## ANNEX TO SUPPLEMENTARY EUROPEAN SEARCH REPORT

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on 13-03-2024.  
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		DE      102017221994 A1	28-02-2019
		KR      20190021891 A	06-03-2019
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		EP      3621174 A1	11-03-2020
		US      2020083727 A1	12-03-2020